



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/071,456	02/08/2002	David L. Dickerson	M122-1943	9958

21567 7590 01/24/2003
WELLS ST. JOHN ROBERTS GREGORY & MATKIN P.S.
601 W. FIRST AVENUE
SUITE 1300
SPOKANE, WA 99201-3828

EXAMINER

MAI, ANH D

ART UNIT	PAPER NUMBER
2814	

DATE MAILED: 01/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/071,456

Applicant(s)

DICKERSON ET AL.

Examiner

Anh D. Mai

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2002.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 55-72 is/are pending in the application.
- 4a) Of the above claim(s) 55-68 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 69-72 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Amendment

1. Amendment filed December 27, 2002 has been entered as Paper No. 11. Claims 49-54 have been canceled. Claims 69-72 have been added. Claims 55-72 are pending. Claims 55-68 have been withdrawn.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Since the feature of the isolation trench is important to the invention, the following title is suggested: SEMICONDUCTOR CONSTRUCTION HAVING OUTERMOST UPPER SURFACE OF TRENCH ISOLATION ELEVATED ABOVE THE GATE DIELECTRIC.

3. The disclosure is objected to because of the following informalities: The inserted portion before the "Technical Field" states: "...now U.S. Patent No. 6,478,978 B1 ..."

The correct Patent No. is **6,372,601**.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 69-72 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Takatsuka et al. (U.S. Patent No. 6,121,113) (IDS).

Takatsuka teaches a semiconductor construction as claimed including:

a semiconductor substrate (1) having a trench (7) extending partially therein and upper surfaces adjacent the trench;

an oxide layer (11) formed over the upper surfaces of the semiconductor substrate (1) and having an uppermost surface;

and an insulative material (9) filling the trench (7) and having a portion (9a) outward of the trench (7) and semiconductor substrate (1), the portion (9a) comprising an outermost upper surface elevationally above the uppermost surface of the oxide layer (11) and sidewalls connecting the outermost upper surface with the oxide layer (11), the connection between the sidewalls and the outermost upper surface comprising curved corners, and the connection between the sidewalls and the oxide layer (11) comprising curved corners extending from elevationally above the oxide layer (11) downward to the uppermost surface of the oxide layer (11). (See Fig. 6I).

With respect to claim 70, the insulative material (9) of Takatsuka comprises oxide.

With respect to claim 71, insofar as the structure is concerned, the two oxide layers, liner oxide and trench fill oxide, become a single oxide filling the trench.

With respect to claim 72, the semiconductor construction of Takatsuka further comprising a polysilicon layer (12) formed against the uppermost surface of the oxide layer (11) and the portion (9a) of the insulative material (9).

Response to Arguments

5. Applicant's arguments with respect to claims 49-54 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh D. Mai whose telephone number is (703) 305-0575. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax phone numbers for the

Application/Control Number: 10/071,456

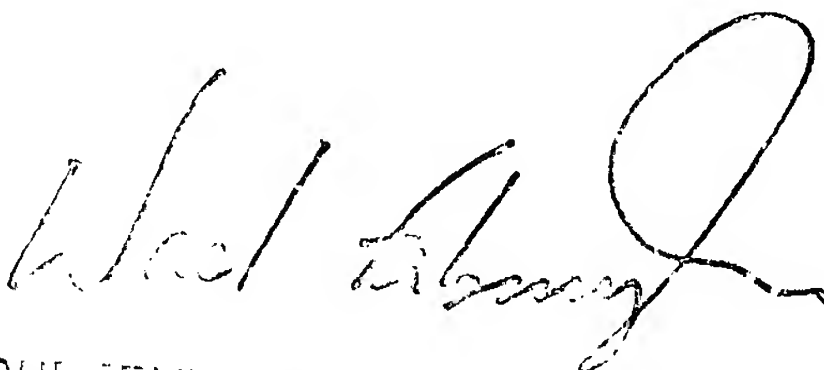
Art Unit: 2814

Page 5

organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

A.M
January 17, 2003


SUPERVISORY PRIMARY EXAMINER
TECHNOLOGY CENTER 2800